Loon Pit
Warrick County
Supplemental Evaluation

Date of Survey: March 5 to March 13, 2007

Biologist: Michelle L. Weinman, Assistant Fisheries Biologist

Survey Objectives: 1. Collect catch rate and growth data on crappie. 2. Evaluate the potential of improving size structure and increasing yield of crappie.

Methods: Fish collection effort consisted of 64 overnight standard trap net lifts. Black and white crappie were measured to the nearest 0.1 in TL and weighed to the nearest 0.01 lb. Otoliths were removed from a subsample of crappie for growth analysis. Fishery Analyses and Simulation Tools (FAST) software was used to determine if a minimum size limit (MSL) would improve crappie fishing (Slipke and Maceina 2000).

Summary: A total of 308 white crappie and 28 black crappie was collected. The white crappie ranged in length from 3.4 to 13.9 in, while black crappie ranged from 2.7 to 12.6 in. Forty-eight percent of the white crappie and 29% of the black crappie sampled were 9.0 in or longer. The trap net catch rates were 4.8/lift for white crappie and 0.4/lift for black crappie. White crappie growth was good for ages 1 through 4, but slow for older crappie. Black crappie growth was good through age 4 and slow for age 5.

The crappie population was stunted prior to the pit opening to public fishing in 2000 (Carnahan 2002). That stunted population has contributed to slowing crappie growth for those fish produced prior to 2002 as seen by the varying lengths for those age classes in the age-length key. Since 2004 the crappie harvest has doubled to 600 (Doll 2004; Weinman 2006). However, a harvest of 600 equates to 3.3/acre which is low. The combination of an increasing harvest and natural mortality is slowly reducing the crappie population which is reflected in the better growth for younger fish.

Results from FAST indicate that under a 9.0 in MSL yield would slightly decrease with a conditional natural mortality (cm) of 0.50 and slightly increase with a cm of 0.30. Imposition of a 10.0 in MSL would slightly decrease yield under both cm estimates. Imposing a 9.0 or 10.0 in

MSL would increase the numbers of larger crappie, if fishing mortality increased and growth improved for older crappie. Currently, fishing mortality is low as indicated by the angler creel surveys. However, fishing mortality may increase in the future to the point that crappie regulation changes could improve the fishery. It appears, through personal observations, that fishing pressure has noticeably increased since outboard motors were legalized on January 1, 2007. Therefore, this evaluation should be repeated in 2009 to evaluate if regulation changes could improve the crappie populations size structure and yield. An angler creel survey is also recommended in 2009 to help further evaluate the fishery.

Recommendations:

- Do not change crappie regulations at Loon Pit
- Evaluate the Loon Pit crappie population in 2009 using the same methods as in 2007.

Literature Cited:

Carnahan, D. P. 2002. Blue Grass Fish and Wildlife Area 2001 interim fish management report. Indiana Department of Natural Resources. Indianapolis. 44 pp.

Doll, J. C. 2004. Bluegrass Pit and Loon Pit angler creel survey and largemouth bass survey. Indiana Department of Natural Resources. Indianapolis. 23 pp.

Slipke, J. W. and M. J. Maceina. 2000. Fishery analyses and simulation tools. Auburn University, Auburn, Alabama.

Weinman, M. L. 2006. Bluegrass Pit and Loon Pit angler creel survey and largemouth bass survey. Indiana Department of Natural Resources. Indianapolis. 26 pp.

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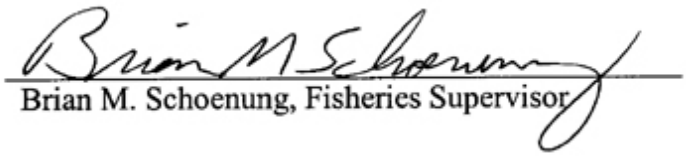
Approved by: 
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